



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/196,812 02/02/94 NILSSEN

OLE K. NILSSEN
CAESAR DRIVE
BARRINGTON, IL 60010

B5M1/0919

EXAMINER	
MIS, D	
ART UNIT	PAPER NUMBER

22

2502
DATE MAILED:

09/19/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☒ Responsive to communication filed on 8/26/94 ☐ This action is made final.
- A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐

Part II SUMMARY OF ACTION

1. ☒ Claims 52-97 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☒ Claims 1-51 have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☐ Claims _____ are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. The finality of the last Office Action is withdrawn since a new rejection must be made, which is double patenting. The previous grounds for rejection have not all been overcome and so continuing after-final prosecution is possible, however, the eventuality of making the double patenting rejection is likely given the appearance that some allowable subject matter is present in the claims and so it seems optimistically likely that finality will have to be withdrawn to make the rejection anyway.

2. The obviousness-type double patenting rejection is a judicially established doctrine based upon public policy and is primarily intended to prevent prolongation of the patent term by prohibiting claims in a second patent not patentably distinct from claims in a first patent. *In re Vogel*, 164 USPQ 619 (CCPA 1970). A timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(b) would overcome an actual or provisional rejection on this ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. § 1.78(d).

3. Claims 52-97 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 4,692,667. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claims are covered by the same means presently claimed.

4. Claims 67-71, 74 and 76-79 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 67, last two lines, it is not particularly pointed out what terminal means is referred to. The likely one is the other of Ja or Jb. However yet other terminals in the inverter fit the description, and may or may not be claimed.

It must be indicated hereby, that the dependency of claim 68 is invalid. Claim 21 has been cancelled and can not be used, while claim 67 might be satisfactory instead.

In claim 69, the second pair of terminals are said to be (in claim 67) in the inverter, and then said (in claim 69) to include one of the rectifier terminals. The rectifier is not in the inverter, however, so it is not clear how a rectifier terminal can be in the inverter.

There is no antecedent basis in claim 72 for the B+/- terminals of claims 74 and 76.

In claim 77, lines 14-16, it is not clear that the "sufficient structure to cause" is merely the third sub-circuit's connection means to the second sub circuit (This understanding based on the language of claim 80.), the second sub-circuit being what provides the unidirectional voltage. While it can be construed in claims 72 and 80 that the rectifier and IM provide the unidirectional voltage having a magnitude on average to be substantially equal to the DC supply voltage magnitude since these claims do not contradict the construing process, the same can not be construed in claim 77 since the "sufficient structure to cause" must be "sufficient" and so must include the rectifier and IM, which are not included in the third sub-circuit of claim 77. That is, assuming the average magnitudes being about the same is because of the rectifier and IM; the specification does not attribute the characteristic of concern to any means

Serial Number: 08/196,812
Art Unit: 2502

-4-

(See page 7, "(h)", which seems to teach what is claimed. Apparently, that section of the specification attempts to point out the negligible magnitudes across the saturable transformers. However, all that is claimed is the magnitude across B+ and B-, which are due to the rectifier and IM.)

5. Based on the specification, it is construed that

- 1) a voltage having a sinusoidal shape can be produced at the output of an inverter by having inverter frequency resonant means (LC) across the output of the inverter, and that
- 2) saturable transformer means (SCT1 and SCT2) responsive to inverter output current and providing signals to the inverter transistors affect the frequency of the inverter output voltage, and that
- 3) inductor means (IM) has an inductance large enough to cause the current through its windings to be substantially constant.

6. The date that 6. 1) above was first filed seems to be 10/5/84, the filing date of parent application 06/658,423.

The date that 6. 2) above was first filed seems to be 3/20/78, the filing date of parent application 05/890,586.

The date that 6. 3) above was first filed seems to be 10/5/84, the filing date of parent application 06/658,423.

It is noted that application 06/661,468 filed 10/16/84, now U.S. Patent no. 4,692,667, seems to be related to 06/658,423 and

seems to have been the first filing of the present teaching combination, except for not having the last three paragraphs "(j)", "(k)" and "(l)".

7. Independent claims 52, 54, 65, 67, 77, 80, 90, 92, 93 and 96 limit the invention to having the inverter means produce a substantially sinusoidal voltage. (Filed around October '84.)

Independent claim 84 claims the LC circuit responsible for the sinusoidal voltage, but not the sinusoidal voltage. (Filed around October '84.)

Independent claims 59 and 72 do not claim the LC circuit or the inverter means for producing the sinusoidal voltage.

8. Burke disclosed an inverter whose output is connected to an LC circuit, but whose output involves three terminals - reference and the collectors of 1 and 3 - connected to a center-tapped transformer winding. The present circuit uses three inverter output terminals - reference and two transistor-pair junctions - connected directly to the load. Design practices, known in the art, of generally connecting, between a unidirectional voltage source, any one of a push-pull, full, half or quarter bridge inverter and then between the outputs of the chosen inverter connecting any load via a transformer or other impedances or directly, which inverter was thought of as comprising the transformer or impedances and connections, might be construed to

render certain permutations of the Burke circuit obvious. Most importantly, the claimed ones. However, the teaching of also moving the resonant circuit to the appropriate place and suitably modifying it was not anticipated by Burke. Given construing that the claimed inverter means for sinusoidal voltage production are the specified ones or equivalents, and the Burke circuit being equivalent, to overcome Burke, it is necessary that the claims be additionally for what is new that further characterizes the present teachings being equivalent to the Burke teachings.

Claim 52 further limits the circuit to means such as SCT1,2, which combined with producing the sinusoidal voltage is not obvious.

Claim 54 includes the non-obvious combination where half of L has the sinusoidal voltage.

Claims 59 and 61-64 have equivalent means in Burke; claim 60 does not.

Claim 65 does not include any non-obvious limitation and is for a circuit which the Burke circuit is equivalent to. Claim 66 is non-obvious since the series connected transistors plus the equivalent part of the Burke circuit was not anticipated.

Claim 67 is for a circuit that the Burke circuit is equivalent to, at least since any terminal of Burke can be chosen to be the other of the second pair of terminals and since the voltage doubler was another design choice. Claims 68-71 do not add any non-obvious means.

Claims 72 includes the inverter transistors being series connected across the unidirectional voltage; not in Burke.

Claim 77 includes inverter means between the two common nodes not having equivalent means in Burke.

Claim 80 is covered by half of L - the third sub-circuit sub-circuitry; Burke taught no equivalent.

Claim 84 includes parallel-connected inductor and capacitor means across the inverter output; not in Burke.

Claim 90 includes means equivalent to half of L, no equivalent in Burke.

Claim 92 includes means equivalent to half of L, no equivalent in Burke.

Claim 93, the claimed means covered by PW1,2 have no equivalents in Burke.

Claim 96, the claimed series transistors across the unidirectional voltage have no equivalents in Burke.

9. Walden disclosed a ballast and indicated the design option of using a push-pull, full or half bridge inverter with loads connected across a capacitor.

Zansky disclosed ballasts in '600 and '087 and indicated the design option of connecting the load across a capacitor or a transformer.

Burke connected a lamp via a push-pull inverter and a transformer.

Justice connected a lamp directly across a push-pull inverter winding inductance.

Loads and resonant elements were known to be represented by impedances. Methods for forming equivalent circuits with such impedances were known to those of ordinary skill. Any lamp could have been supplied from any inverter using appropriate impedance matching. For example, the lamps of '087 could have been supplied through a full bridge inverter and the tuning capacitor could have been reflected to the primary side of the transformer and for some lamps not needing transformer voltage transformation the transformer could have been omitted and substituted with just the inductance necessary for resonance - just by using known design methods, the present invention could have been built. The "motivation" for building it would have been to suitably supply any lamp by a known method using any circuits equivalently performing the method. Using known design options to equivalently supply a lamp was within the level of skill of one of ordinary skill in the art.

The combination of the voltage doubling rectifier and center tapped tank inductor seems to be an improvement.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or

on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 59 and 62-64 are rejected under 35 U.S.C. § 102(b.) as being anticipated by Burke.

The means of Burke are equivalent to what is claimed.

12. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

13. Claims 61 is rejected under 35 U.S.C. § 103 as being unpatentable over Burke.

It would have been obvious to one of ordinary skill in the art to have used a voltage doubling rectifier by design. The "motivation" being to adapt any supply to any load using known methods of design.

14. Claims 59-68, 70-72, 74-79, 84-89 and 96-97 are rejected under 35 U.S.C. § 103 as being unpatentable over the references of 9 above.

It would have been obvious to one of ordinary skill in the art to have modified, as claimed, the Burke reference using the design options explained above and equivalent circuits, the "motivation" being to adapt a source to a load using any known equivalent options.

That is the full bridge inverter would have replaced the push pull inverter, the transformer would have been omitted, leaving a parallel LC circuit. Only the PW type feedback and center tapped L would not have been so anticipated.

(Claims 69, although indefinite, 73, 80-83 and 90-92 seem to be for means for the function, provided by the half of L, which connects the first transistor terminal via a PW winding, itself, reference and a rectifier capacitor to the DC supply terminal, considered to be a novel function.)

(Claims 93-95 include the PW_{1,2} limitation.)

Claim 97 adds a function that is provided by the known tank circuit across the output of the inverter.

15. Claims 52-58, 69, 73, 80-83, and 90-95 seem to have allowable subject matter.

16. Indication of the importance of the claimed functions is necessary to make it apparent that novelty (newness and usefulness as in 35 U.S.C. 101) is pointed out by them (when the novelty is not obvious). And, it is usually not obvious why Applicant's typical claimed phenomena of existences of parameters of certain magnitudes and shapes are novel. Based on the interviews with Applicant, it is now at least clear enough that one of ordinary skill in the art would have been able to construe what the claimed phenomena represent.

17. 35 U.S.C. § 101 reads as follows:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

Accordingly, it seems Applicant has "discovered" a "new" and "useful" "improvement" as indicated above.

18. This application discloses and claims only subject matter disclosed in prior application Serial No. 06/661,468 filed 10/16/84, now U.S. Patent No. 4,692,667, and names an inventor or inventors named in the prior application.

Accordingly, this application may constitute a continuation or division. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. § 120 and 37 C.F.R. § 1.78.

Serial Number: 08/196,812
Art Unit: 2502

-12-

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Mis whose telephone number is (703) 308-4907.



DAVID MIS
EXAMINER
GROUP ART UNIT 252

dm
September 14, 1994